

Командная оболочка Midnight Commander

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Цели и задачи работы

Цель лабораторной работы

Ознакомление с файловой системой Linux, её структурой, именами и содержанием каталогов. Приобретение практических навыков по применению команд для работы с файлами и каталогами, по управлению процессами, по проверке использования диска и обслуживанию файловой системы.

Задачи лабораторной работы

- 1 Изучить возможности Midnight Commander
- 2 Изучить редактор Midnight Commander

Процесс выполнения лабораторной работы

Работа с Midnight Commander

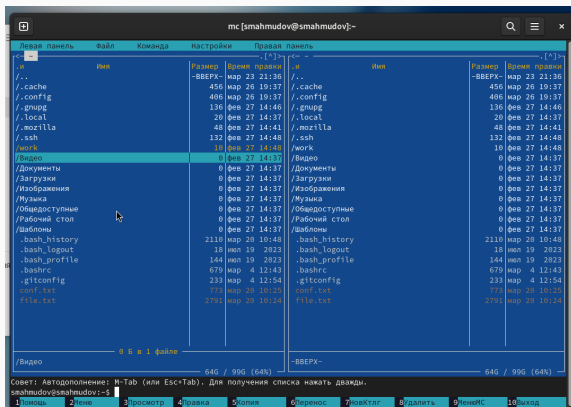


Рис. 1: Запуск mc

Работа с Midnight Commander

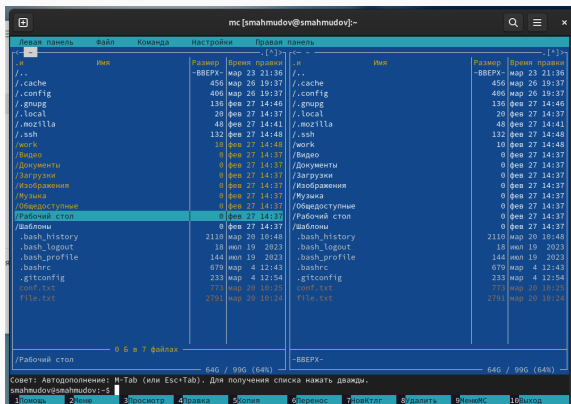


Рис. 2: Выделение

Работа с Midnight Commander

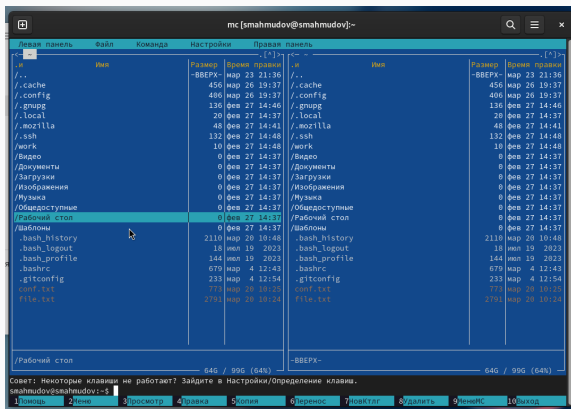


Рис. 3: Отмена

Работа с Midnight Commander

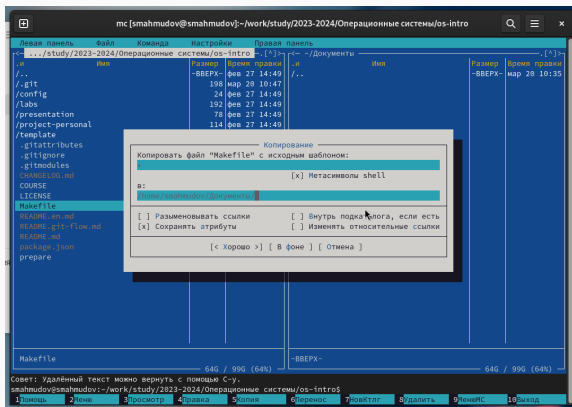


Рис. 4: Копирование

Работа с Midnight Commander

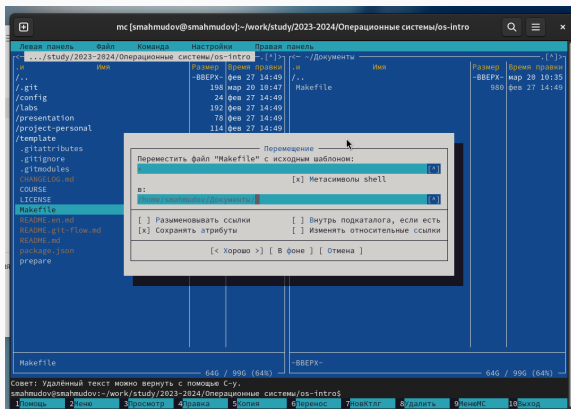


Рис. 5: Перемещение

Работа с Midnight Commander

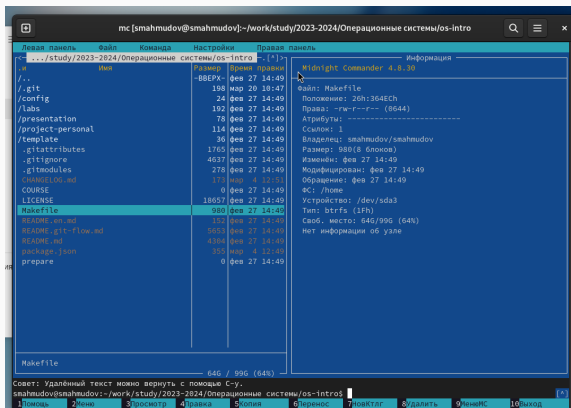


Рис. 6: Информация

Работа с Midnight Commander

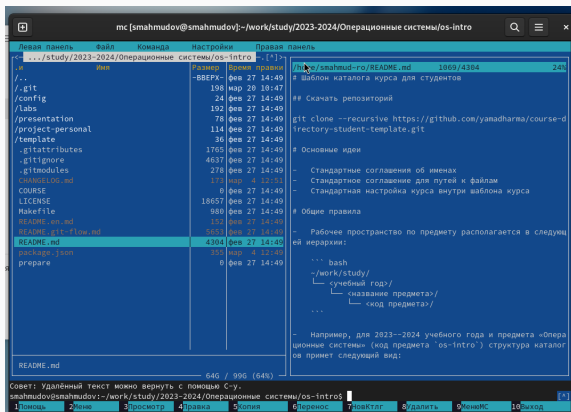


Рис. 7: Быстрый просмотр

Работа с Midnight Commander

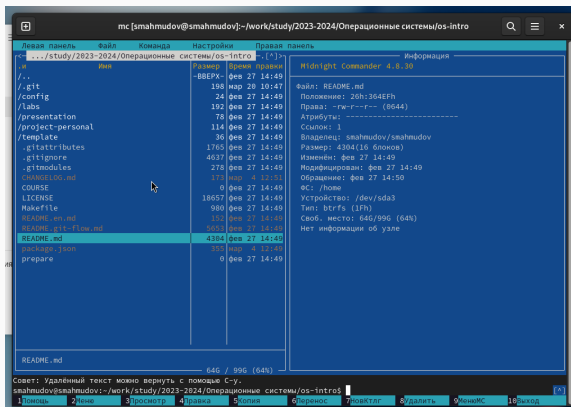


Рис. 8: Информация

Работа с Midnight Commander

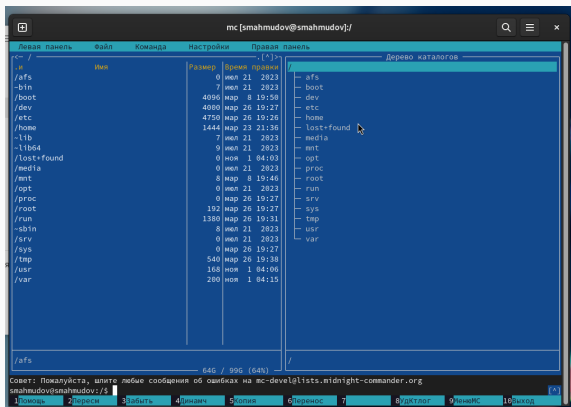
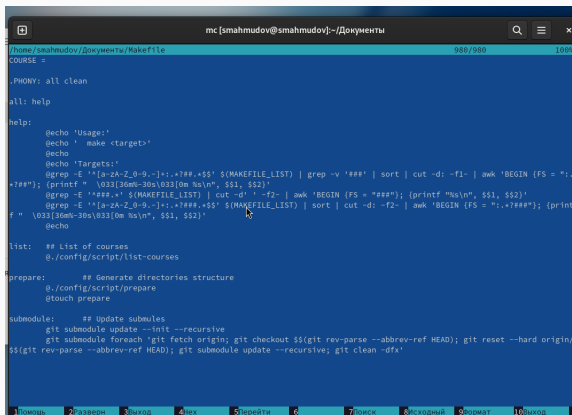


Рис. 9: Дерево каталогов

Работа с Midnight Commander



The screenshot shows the Midnight Commander (mc) interface. The title bar indicates the user is 'smahmudov@smahmudov' in the directory '~/Документы'. The main window displays the contents of a file named 'Makefile' located at '/home/smahmudov/Документы/Makefile'. The file size is 980/980 bytes and it is 100% readable. The content of the Makefile is as follows:

```
COURSE =

.PHONY: all clean

all: help

help:
    @echo 'Usage:'
    @echo '  make <target>'
    @echo
    @echo 'Targets:'
    @grep -E '^[a-zA-Z_0-9-]+:.*?##.*$$' $(MAKEFILE_LIST) | grep -v '##' | sort | cut -d: -f1- | awk 'BEGIN {FS = ":.
+?##"}; {printf " %33[36m-30s[033[0m %s\n", $$1, $$2}'
    @grep -E '^[a-zA-Z_0-9-]+:.*?##.*$$' $(MAKEFILE_LIST) | cut -d: -f2- | awk 'BEGIN {FS = "##"}; {printf "%s\n", $$1, $$2}'
    @grep -E '^[a-zA-Z_0-9-]+:.*?##.*$$' $(MAKEFILE_LIST) | sort | cut -d: -f2- | awk 'BEGIN {FS = ":.
+?##"}; {printf " %33[36m-30s[033[0m %s\n", $$1, $$2}'
    @echo

list: ## List of courses
    @./config/script/list-courses

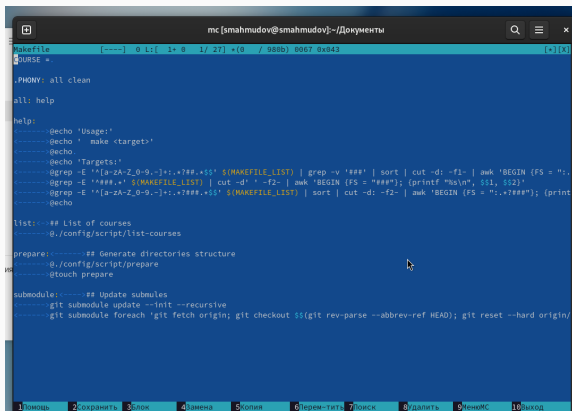
prepare: ## Generate directories structure
    @./config/script/prepare
    @touch prepare

submodule: ## Update submodules
    git submodule update --init --recursive
    git submodule foreach 'git fetch origin; git checkout $(git rev-parse --abbrev-ref HEAD); git reset --hard origin/
$(git rev-parse --abbrev-ref HEAD); git submodule update --recursive; git clean -dfx'
```

At the bottom of the window, there is a toolbar with icons for various actions: 1. Помощь (Help), 2. Развернуть (Expand), 3. Выход (Exit), 4. Лек (Lecture), 5. Скриншот (Screenshot), 6. Поиск (Search), 7. Поиск (Search), 8. Исходный (Original), 9. Формат (Format), 10. Выход (Exit).

Рис. 10: Просмотр содержимого текстового файла

Работа с Midnight Commander



The screenshot shows the Midnight Commander (mc) interface. The title bar indicates the user is 'smahmudov@smahmudov' in the directory 'Документы'. The main window displays the contents of a file named 'makefile'. The file's metadata at the top shows it is 0 bytes, with permissions '1+ 0 1/ 27' and a timestamp '080b 0067 0x043'. The file content includes comments and shell commands for a build system, such as 'PHONY: all clean', 'all: help', 'help: @echo Usage:', and various 'list:', 'prepare:', and 'submodule:' targets. A mouse cursor is visible over the text. At the bottom, a menu bar contains 10 numbered items: 1.Помощь, 2.Сохранить, 3.Блок, 4.Вставка, 5.Копия, 6.Перем-тить, 7.Поиск, 8.Удалить, 9.Выход, 10.Выход.

```
mc [smahmudov@smahmudov]:~/Документы
makefile  [-----]  0 Li[ 1+ 0 1/ 27] +(0 / 080b) 0067 0x043  [+][x]
makefile:
PHONY: all clean

all: help

help:
-----@echo 'Usage:'
-----@echo ' make <target>'
-----@echo
-----@echo 'Targets:'
-----@grep -E '[a-zA-Z_0-9.-]+:.*7##,55' $(MAKEFILE_LIST) | grep -v '###' | sort | cut -d: -f1 | awk 'BEGIN {FS = ":\n"}'
-----@grep -E '###.*' $(MAKEFILE_LIST) | cut -d: -f2- | awk 'BEGIN {FS = "###"; (printf "%s\n", $1, $2)}'
-----@grep -E '[a-zA-Z_0-9.-]+:.*7##,55' $(MAKEFILE_LIST) | sort | cut -d: -f2- | awk 'BEGIN {FS = ":\n"}' (print
-----@echo

list:---## List of courses
-----@./config/script/list-courses

prepare:-----## Generate directories structure
-----@./config/script/prepare
-----@touch prepare

submodule:-----## Update submodules
-----git submodule update --init --recursive
-----git submodule foreach 'git fetch origin; git checkout 55(git rev-parse --abbrev-ref HEAD); git reset --hard origin/
```

Рис. 11: Отредактируем содержимое текстового файла без сохранения результатов

Работа с Midnight Commander

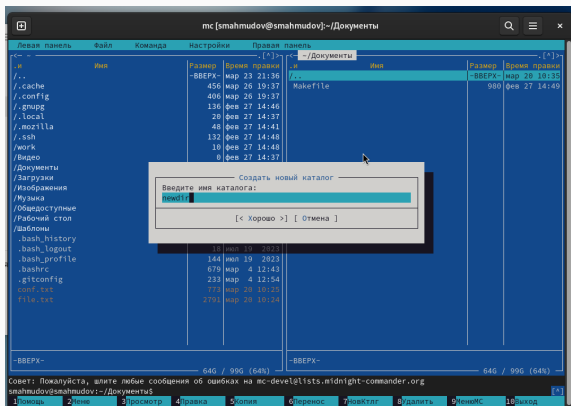


Рис. 12: Создание каталога

Работа с Midnight Commander

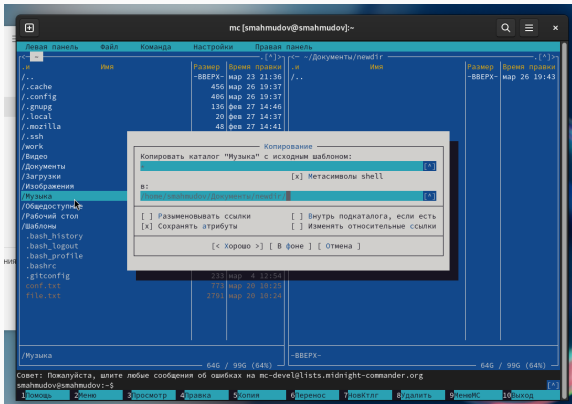


Рис. 13: Копирование в файлов в созданный каталог

Работа с Midnight Commander

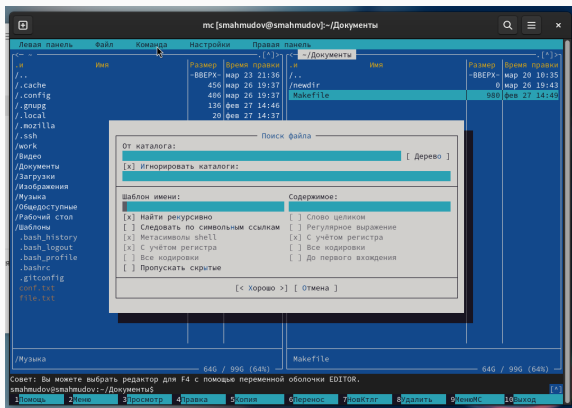


Рис. 14: Поиск файлов

Работа с Midnight Commander

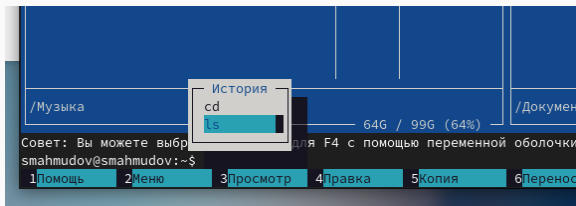


Рис. 15: История команд

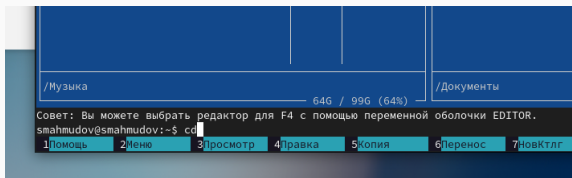


Рис. 16: Переход в домашний каталог

Работа с Midnight Commander



```
mc.ext.ini      [-----]  0 L: [ 1+ 0  1/1136] *0  /26909b) 0035 0x023  [.*][X]
Midnight Commander 4.8 extension file
#
# Warning: The structure of this file has been completely changed with the version 4.0!
#
# All lines starting with # or empty lines are ignored.
#
# IMPORTANT: mc scans this file only upon first use or after editing it using the
# mc "Edit extension file" command (F8-c-e). If you edit this file in any other way
# while mc is running, you will need to press F8-c-e and exit the editor for your
# changes to take effect, or exit mc and start it again.
#
# Section name can be anything with following exceptions:
#   there are two reserved section names:
#       mc.ext.ini
#       Default
#   special name pattern:
#       Include/xxxx
#   See below for more details.
#
# Section [mc.ext.ini] is mandatory. It contains file metadata.
# "Version" parameter is mandatory. It contains the file format version.
#
# Section [Default] is optional. It is applied only if no other match was found.
#
# Sections like [Include/xxxx] can be referenced as "Include=xxxx" from other sections.
# Section [Include/xxxx] can be located as before as after sections that point to it.
#
# Sections are processed from top to bottom, thus the order is important.
# If there are more than one sections with the same name in this file, the first
# section will be used.
#
# [Default] should be a catch-all action and come last.
#
```

Рис. 17: Просмотр файла расширений

A screenshot of the Midnight Commander file menu. The window title is "menu" with a status bar at the top showing "1 t: 1*16 17/378 *(732 /11821b) 0010 0x00A" and a close button. The menu text is as follows:

```
shell_patterns=0

#####
# %% The % character
# %f The current file (if non-local vfs, file will be copied locally and
#           %f will be full path to it)
# %p The current file
# %d The current working directory
# %s "Selected files"; the tagged files if any, otherwise the current file
# %t Tagged files
# %u Tagged files (and they are untagged on return from expand_format)
# %v Run the commands and pipes standard output to the view command
# If %view is immediately followed by '|', recognize keywords
#   ascii, hex, nroff and unform
#
# If the format letter is in uppercase, it refers to the other panel
#
# With a number followed the % character you can turn quoting on (default)
# and off. For example:
# %f   quote expanded macro
# %if  ditto
# %of  don't quote expanded macro
#####

+ ! t t
| Do something on the current file
| CMD=%(Enter command)
| SCMD %f

+ t t
| Do something on the tagged files
| CMD=%(Enter command)
| for i in %t ; do
```

At the bottom of the window is a toolbar with 10 icons labeled in Russian: 1. Помощь (Help), 2. Сохранить (Save), 3. Поиск (Find), 4. Имена (Names), 5. Скопия (Copy), 6. Перенести (Move), 7. Повтор (Repeat), 8. Удалить (Delete), 9. НенайС (Not Found), 10. Выход (Exit).

Рис. 18: Просмотр файла меню

Работа с Midnight Commander



Рис. 19: Конфигурация

Работа с Midnight Commander



Рис. 20: Внешний вид

Работа с Midnight Commander



Рис. 21: Настройки панелей



Рис. 22: Подтверждение



Рис. 23: Оформление



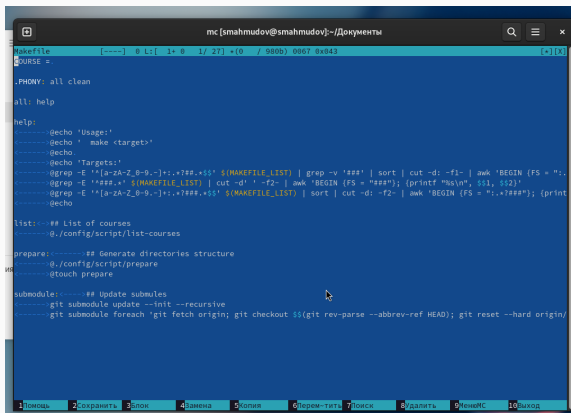
Рис. 24: Кодировка символов

Работа с Midnight Commander



Рис. 25: Распознавание клавиш

Работа с редактором Midnight Commander



The screenshot shows the Midnight Commander (mc) file editor interface. The title bar indicates the user is 'smahmudov@smahmudov' in the directory '~/Документы'. The editor is displaying a file named 'Makefile'. The status bar at the bottom shows various icons and labels: 1 Помощь (Help), 2 Сохранить (Save), 3 Блок (Block), 4 Переименовать (Rename), 5 Копия (Copy), 6 Переместить (Move), 7 Поиск (Search), 8 Удалить (Delete), 9 Меню (Menu), and 10 Выход (Exit). The main text area contains the following content:

```
Makefile [-----] 0 Li: 1+ 0 1/ 27] +(0 / 980b) 0b67 0x843 [+][X]
COURSE =

.PHONY: all clean

all: help

help:
-----@echo 'Usage:'
-----@echo ' make <target>'
-----@echo.
-----@echo 'Targets:'
-----@grep -E '[a-zA-Z_0-9.-]+:.*?##.*$$' $(MAKEFILE_LIST) | grep -v '###' | sort | cut -d: -f1- | awk 'BEGIN {FS = "
-----@grep -E '###.*' $(MAKEFILE_LIST) | cut -d' ' -f2- | awk 'BEGIN {FS = "###";} {printf "%s\n", $$1, $$2}'
-----@grep -E '[a-zA-Z_0-9.-]+:.*?##.*$$' $(MAKEFILE_LIST) | sort | cut -d: -f2- | awk 'BEGIN {FS = "
-----@echo

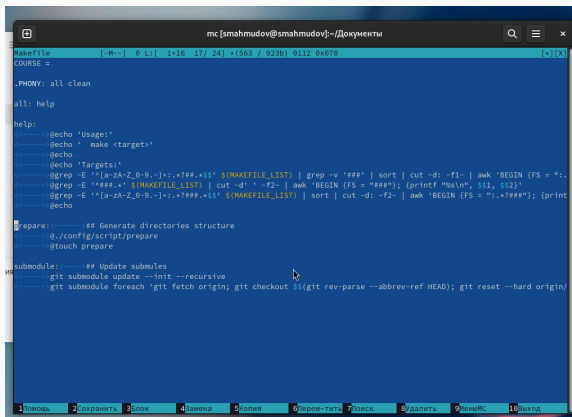
list:## List of courses
-----@./config/script/list-courses

prepare:-----## Generate directories structure
-----@./config/script/prepare
-----@touch prepare

submodule:-----## Update submodules
-----git submodule update --init --recursive
-----git submodule foreach 'git fetch origin; git checkout $$ (git rev-parse --abbrev-ref HEAD); git reset --hard origin/
```

Рис. 26: Файл с текстом

Работа с редактором Midnight Commander



The image shows a screenshot of the Midnight Commander (MC) file manager and editor. The window title is "mc [smahmudov@smahmudov]: ~/Документы". The file being edited is "Makefile", located at "0 L: [1+16 17/ 24] + (563 / 923b) 0112 0x070". The text in the editor is a Makefile script. The status bar at the bottom contains icons and labels for various actions: Помощь, Сохранить, Блок, Дамена, Копия, Берем-титл, Поиск, Удалить, ФичаMC, and Выход.

```
Makefile
COURSE =

.PHONY: all clean

all: help

help:
    @echo 'Usage:'
    @echo ' make <target>'
    @echo.
    @echo 'Targets:'
    @grep -E '[a-zA-Z_0-9.-]+:.*?##.*$$' $(MAKEFILE_LIST) | grep -v '##' | sort | cut -d: -f1- | awk 'BEGIN {FS = ":"; }'
    @grep -E '###.*' $(MAKEFILE_LIST) | cut -d' ' -f2- | awk 'BEGIN {FS = "###";} {print "##", $$1, $$2}'
    @grep -E '[a-zA-Z_0-9.-]+:.*?##.*$$' $(MAKEFILE_LIST) | sort | cut -d: -f2- | awk 'BEGIN {FS = ":"; ##?##"}; {print

prepare:##### ## Generate directories structure
    @./config/script/prepare
    @touch prepare

submodule:##### ## Update submodules
    git submodule update --init --recursive
    git submodule foreach 'git fetch origin; git checkout $$ (git rev-parse --abbrev-ref HEAD); git reset --hard origin'
```

Рис. 27: Файл с текстом


```

ms [smahmudov@smahmudov:~/Документы
Makefile [0M~] 0 L [ 1+19 20 / 45] * (648 / 1516b) 0112 9x070
COURSE =
.PHONY: all clean
all: help
help:
#####@echo 'Usage:'
#####@echo ' make <target>'
#####@echo
#####@echo 'Targets:'
#####@egrep -E '[a-zA-Z_0-9-]+\.[?##,]+$' $(MAKEFILE_LIST) | grep -v '###' | sort | cut -d: -f1 | awk 'BEGIN (FS = ":",
#####@egrep -E '###.*' $(MAKEFILE_LIST) | cut -d: ' -f2 | awk 'BEGIN (FS = "###"); (printf "%s\n", $$1, $$2)'
#####@egrep -E '[a-zA-Z_0-9-]+\.[?##,]+$' $(MAKEFILE_LIST) | sort | cut -d: -f2 | awk 'BEGIN (FS = ":",?####); (print
#####@echo
prepare:##### Generate directories structure
#####@touch prepare
#####@touch prepare
prepare:##### Generate directories structure
#####@touch prepare
prepare:##### Generate directories structure
#####@touch prepare
prepare:##### Generate directories structure
#####@touch prepare
prepare:##### Generate directories structure
#####@touch prepare
prepare:##### Generate directories structure
#####@touch prepare
prepare:##### Generate directories structure
#####@touch prepare
prepare:##### Generate directories structure
#####@touch prepare
#####@touch prepare
1помощь 2сохранить 3Блок 4Взвешен 5Копия 6Перем-нить 7Поиск 8Удалить 9Печать 10Выход

```

31/38

Работа с редактором Midnight Commander

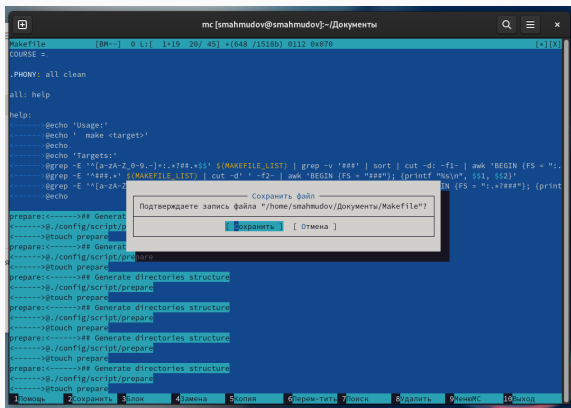
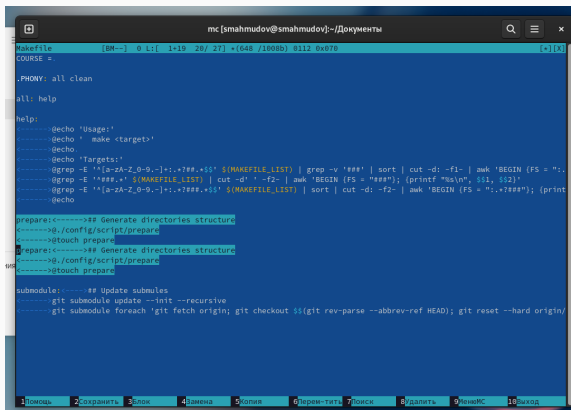


Рис. 29: Сохранение

Работа с редактором Midnight Commander



The screenshot shows the Midnight Commander (mc) interface. The title bar indicates the user is 'smahmudov' in the directory '~/Документы'. The main window displays a file named 'Makefile' with a size of 0 bytes and a date of 1+19 20/ 27. The file's contents are shown in a monospaced font. The Makefile includes a 'COURSE =' line, a '.PHONY: all clean' declaration, and a 'help:' target. The 'help:' target uses several shell commands, including 'echo', 'grep', 'cut', and 'awk', to display usage information and targets. The 'prepare:' target is used to generate the directory structure, and the 'submodule:' target is used to update submodules. The interface has a dark blue background with a light blue border. At the bottom, there is a menu bar with options: 1.Помощь, 2.Сохранить, 3.Блок, 4.Замена, 5.Копия, 6.Перем-тить, 7.Поиск, 8.Удалить, 9.МенюMC, 10.Выход.

```
mc [smahmudov@smahmudov]: ~/Документы
Makefile [BM--] 0 L:[ 1+19 20/ 27] +(648 /1000b) 0112 0x070 [*]X
COURSE =

.PHONY: all clean

all: help

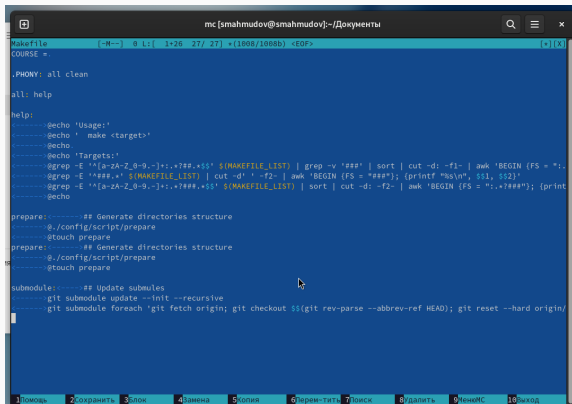
help:
-----@echo 'Usage:'
-----@echo ' make <target>'
-----@echo
-----@echo 'Targets:'
-----@grep -E '^[a-zA-Z_0-9-]+:.*?##.##$' $(MAKEFILE_LIST) | grep -v '###' | sort | cut -d: -f1- | awk 'BEGIN {FS = ":";
-----@grep -E '###.##.' $(MAKEFILE_LIST) | cut -d' ' -f2- | awk 'BEGIN {FS = "###"; (printf "%s\n", $$1, $$2)
-----@grep -E '^[a-zA-Z_0-9-]+:.*?##.##$' $(MAKEFILE_LIST) | sort | cut -d: -f2- | awk 'BEGIN {FS = ".*?##.##"; (print
-----@echo

prepare:-----## Generate directories structure
----->@./config/script/prepare
----->@touch prepare
prepare:-----## Generate directories structure
----->@./config/script/prepare
----->@touch prepare

submodule:-----## Update submules
----- git submodule update --init --recursive
----- git submodule foreach 'git fetch origin; git checkout $$ (git rev-parse --abbrev-ref HEAD); git reset --hard origin/
```

Рис. 30: Отмена

Работа с редактором Midnight Commander



```
mc [smahmudov@smahmudov]:~/Документы
Makefile 0 l: 1+26 27/ 27 *(1088/1088b) <EOF>
COURSE =.

.PHONY: all clean

all: help

help:
-----@echo 'Usage:'
-----@echo ' make <target>'
-----@echo
-----@echo 'Targets:'
-----@grep -E '^[a-zA-Z_0-9-]+.*?##.*$$' $(MAKEFILE_LIST) | grep -v '##' | sort | cut -d: -f1- | awk 'BEGIN {FS = ":";
-----@grep -E '^[###.*] $(MAKEFILE_LIST) | cut -d' ' -f2- | awk 'BEGIN {FS = "##"}; {printf "%s\n", $$1, $$2}'
-----@grep -E '^[a-zA-Z_0-9-]+.*?##.*$$' $(MAKEFILE_LIST) | sort | cut -d: -f2- | awk 'BEGIN {FS = ":"; ##"}; {print
-----@echo

prepare:-----## Generate directories structure
-----@./config/script/prepare
-----@touch prepare
prepare:-----## Generate directories structure
-----@./config/script/prepare
-----@touch prepare

submodule:-----## Update submodules
-----git submodule update --init --recursive
-----git submodule foreach 'git fetch origin; git checkout $$ (git rev-parse --abbrev-ref HEAD); git reset --hard origin/
```

1 Помощь 2 Сохранить 3 Блок 4 Панена 5 Копия 6 Переименовать 7 Поиск 8 Удалить 9 Меню 10 Выход

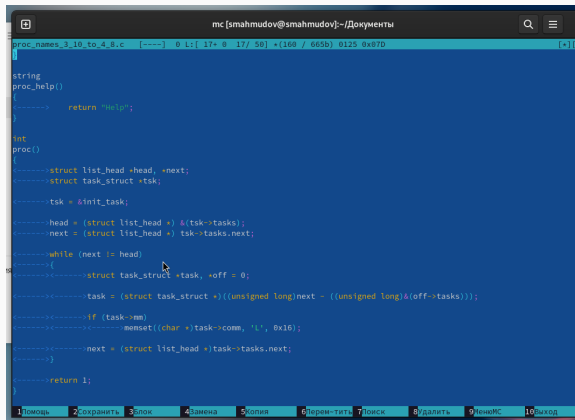
Рис. 31: Переход в конец файла

Работа с редактором Midnight Commander

```
mc [smahmudov@smahmudov]:~/Документы
Makefile [-M--] 9 Lz[ 1+ 6 1/ 27] +9 /1808b) 8010 0x00a [+](x)
COURSE *
.PHONY: all clean
all: help
help:
<----->@echo 'Usage:'
<----->@echo ' make <target>'
<----->@echo.
<----->@echo 'Targets:'
<----->@grep -E '[a-zA-Z_0-9-]+\.[.].*$$' $(MAKEFILE_LIST) | grep -v '###' | sort | cut -d: -f1- | awk 'BEGIN {FS = "
";}
<----->@grep -E '###.*' $(MAKEFILE_LIST) | cut -d' ' -f2- | awk 'BEGIN {FS = "###"}; {printf "%s\n", $$1, $$2}'
<----->@grep -E '[a-zA-Z_0-9-]+\.[.].*$$' $(MAKEFILE_LIST) | sort | cut -d: -f2- | awk 'BEGIN {FS = "
";}###'; {printf "%s\n", $$1, $$2}'
<----->@echo
prepare:<----->## Generate directories structure
<----->@./config/script/prepare
<----->@touch prepare
prepare:<----->## Generate directories structure
<----->@./config/script/prepare
<----->@touch prepare
submodule:<----->## Update submodules
<----->git submodule update --init --recursive
<----->git submodule foreach 'git fetch origin; git checkout $$ (git rev-parse --abbrev-ref HEAD); git reset --hard origin/'
```

Рис. 32: Переход в начало файла

Работа с редактором Midnight Commander



```
mc [smahmudov@smahmudov:~/Документы
proc_names_3_10_to_4_8.c  [----]  0 L: [ 17+ 0 17/ 50] +(168 / 665b) 0125 0x87D  [*]
string
proc_help()
{
    <----->    return "Help";
}

int
proc()
{
    <-----> struct list_head *head, *next;
    <-----> struct task_struct *tsk;

    <-----> tsk = &init_task;

    <-----> head = (struct list_head *) &(tsk->tasks);
    <-----> next = (struct list_head *) tsk->tasks.next;

    <-----> while (next != head)
    <-----> {
    <-----> <-----> struct task_struct *task, *off = 0;

    <-----> <-----> task = (struct task_struct *)((unsigned long)next - ((unsigned long)&(off->tasks)));

    <-----> <-----> if (task->mm)
    <-----> <-----> memset((char *)task->comm, '\0', 0x16);

    <-----> <-----> next = (struct list_head *)task->tasks.next;
    <-----> }

    <-----> return 1;
}
```

Рис. 33: Файл с программой

Работа с редактором Midnight Commander

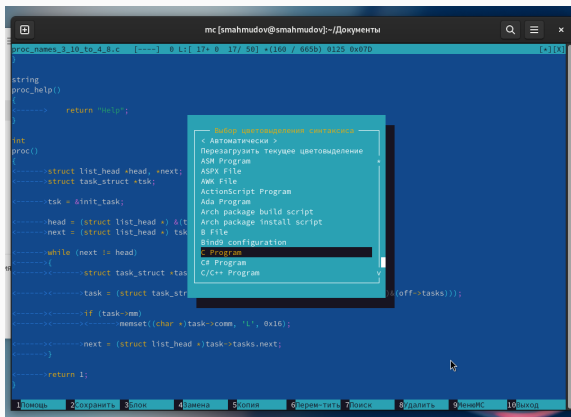


Рис. 34: Цветовыделение синтаксиса

Выводы по проделанной работе

В данной работе мы ознакомились с инструментами поиска файлов и фильтрации текстовых данных. А также приобрели практические навыки по управлению процессами.